Claims

1. A synthetic quartz glass optical material used for the YAG laser with the third or higher order of harmonic, and especially, a synthetic quartz glass optical material for the YAG laser with higher harmonic characterized by OH group concentration in the range of $\geqq 1$ to $\leqq 300$ppm, contained hydrogen molecule concentration in the range of $\geqq 2\times10^{18}$ to $\leqq 2\times10^{19}$ molecules/cm^3, transmittance of ultraviolet rays at 245nm of wavelength with 99.9% or more, and fictive temperature in the range of $\geqq 880$ to $\leqq 990$°C.

2. A synthetic quartz glass optical material for the YAG laser with higher harmonic as claimed in Claim 1, characterized in that chloride concentration contained in the aforesaid synthetic quartz glass optical material is 20ppm or less.

3. A synthetic quartz glass optical material for the YAG laser with higher harmonic as claimed in Claim 1 or Claim 2, characterized in that the aforesaid higher harmonic of YAG laser is the third, fourth or fifth order.